

REMARKS

Claims 1 and 3-29 are pending in the Application and all were rejected in the Office action mailed September 5, 2008. Claims 1, 6, and 18 are amended by the present response, as described below. Claims 1, 6, and 18 are independent claims, while claims 3-5 and 29, 7-17, and 19-28 depend either directly or indirectly from independent claims 1, 6 and 18, respectively.

Applicant expresses appreciation for positive consideration of the request for reconsideration of the finality of the Office action mailed June 6, 2008.

The Applicant respectfully requests reconsideration of claims 1 and 3-29, in light of the following remarks.

Amendments to the Claims

Applicant has amended claim 1 as shown above. Claim 6 has been amended to recite aspects of claim 1. Claim 18 has been amended to correct a punctuation error. Applicant respectfully submits that these amendments do not add new matter.

Rejections of Claims

Claims 1-5 stand rejected under 35 U.S.C. §101 as allegedly directed to non-statutory matter. Claims 1 and 3-29 stand rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 6,671,703, Thompson *et al.* (hereinafter "Thompson") in view of United States Patent No. 7,251,697 to Piotrowski. Applicant respectfully traverses the new grounds for rejection. Applicant respectfully submits that the presently claimed subject matter is allowable over the cited art for at least the reasons presented during prosecution, and in addition for those that follow.

I. Claims 1, 2-5 And 29 Are Directed To Statutory Subject Matter

Applicant has amended claim 1 solely in response to a new rejection by the Office under 35 U.S.C. §101. The Office alleges that claim 1 is directed to non-statutory subject matter. Applicant respectfully disagrees, and notes that claim 1 was found to be statutory in the examination that resulted in the Office action mailed January 28, 2008, and in the examination that resulted in the Office action of June 6, 2008, both prepared by the present examiner. Applicant respectfully submits that this new rejection was not necessitated by any amendments by the Applicant, that the amendments to claim 1 do not add new matter and do not raise new issues that necessitate a new search.

II. The Proposed Combination Of Thompson And Piotrowski Does Not Render Claims 1, 3-5 And 29 Unpatentable

With regard to independent claim 1, Applicant respectfully submits that claim 1 recites, in part, "[a] generator of difference information ... wherein the generator ... outputs the difference information between the first and second streams of information including a differencing instruction set comprising a hierarchical tree map and a plurality of operators represented by variable length codes based on frequency of occurrence of the associated operations." Applicant respectfully submits that the cited references do not teach or suggest at least these aspects of Applicant's claim 1.

The Office states that "...Thompson teaches a generator of difference information ... wherein the generator ... outputs the difference information between the first and second streams of information, and a plurality of operators represented by variable length codes based on a frequency of occurrence of the associated operations (column 3, lines 42-57, where the method compares bytes in both files, determining if there is a mismatch, and in that case using a token to sync the files, where the token varies based on the differences between the two streams, also column 3, lines 35-43, where the server generates a delta file that shows the differences between the two files). " Applicant respectfully notes that the Office cites only Thompson at column 3, lines 35-43 and 42-57 as teaching the above-identified features of Applicant's claim 1.

The Applicant appreciates recognition by the Office that "Thompson does not expressly teach the use of a hierarchical tree encoding scheme." See Office action at page 3. However, the Office then turns to Piotrowski and states, in part, "...Piotrowski teaches a method for streaming of an XML document comprising: a hierarchical tree encoding structure (column 1, lines 22-34, where XML stores data in a hierarchical tree structure)."

As an initial matter, Applicant respectfully submits that the Office has failed to even address all of the features of Applicant's claim 1, and has not shown where either Thompson or Piotrowski teach or suggest "...including a differencing instruction set comprising a hierarchical tree map...", as recited by Applicant's claim 1. The Office does not show where the proposed combination of references teaches anything with regard to an "instruction set", let alone a "differencing instruction set" as recited by Applicant's claim 1. Applicant respectfully submits that this distinguishing aspect of Applicant's claim 1 is not taught by either Thompson or Piotrowski, and that a *prima facie* case of obviousness has not been established, for at least this reason alone. Therefore, Applicant respectfully submits that claim 1 is allowable over Thompson and Piotrowski, for at least this reason.

Applicant now addresses the cited teachings of Thompson at column 3, lines 35-43 and 42-57, which Applicant has reproduced below:

Hence, the present invention provides for a more efficient approach to maintaining synchronization of remote client files. In this approach, the server 14, compares an original file with a revision of the file, and generates a delta modification file which describes the changes that need to be made to the original file to create the revised file on the client 16. This delta or modification file has been transmitted to the remote user, where the changes, as described in the delta modification file, will be applied to the remote users copy of the original file to create the revised file.

Generally, the file difference synchronization method will go along comparing bytes in both files, as long as they match, the count is increased, which will be the amount for a skip record. When there is a mismatch, a token's worth of bytes at the mismatch point is grabbed from both the original

file and revision file. With the token from the original file, there is an attempt to find that token in the revision file. If the matching token is found, it is called a "sync" and there is an assumption that there was an insert. Likewise, with the token from the revision file there is an attempt to find it in the original file. If a match is found, it is called a "sync" and there is an assumption that there has been a delete. If neither is found, then it is assumed that there was a replace of one byte, advance both file pointers, grab tokens from both files and continue to look for a sync point.

The portions of Thompson shown above teach that a server compares an original file with a revision of the file to generate a "delta modification file" which describes the changes to be made to the original file to create the revised file. This "delta modification file" is then transmitted to a remote user where the changes described in the "delta modification file" are applied to the remote user's copy of the original file to create the revised file. The file difference synchronization method compares bytes in both files and when there is a mismatch, a "token's" worth of bytes at the mismatch point is grabbed from both the original file and revision file. Thompson does not define the term "token." The method then attempts to find that "token" from the original file in the revision file. If the matching token is found, it is called a "sync", and the method assumes an insertion occurred. The method also searches for the token from the revision file in the original file. If a match is found, it is called a "sync", and the method assumes there has been a deletion. If neither is found, a replacement of one byte is assumed, both file pointers are advanced, tokens are grabbed from both files, and searching for "sync points" continues.

Applicant respectfully submits that the cited portion of Thompson fails to teach or suggest "...a generator of difference information ... wherein the generator ... outputs ... a plurality of operators represented by variable length codes based on a frequency of occurrence of the associated operations...", as asserted by the Office. There is no mention in the cited portion of Thomson of outputting anything, including any "operators", or of representing anything using a "variable length code", as recited by Applicant's claim 1. The cited portion of Thompson simply fails to say anything about "a

generator of difference information" that outputs "operators". Further, there is no mention of basing anything on a "frequency of occurrence", let alone "variable length codes" used to represent "a plurality of operators" in "difference information" output by a "generator". These distinguishing elements of Applicant's claim 1 are simply not taught by the cited portion of Thompson.

Indeed, Applicant has reviewed the whole of Thompson, and find that Thompson is simply silent with respect to "codes", "variable length codes", "operators" or a "plurality of operators", of representing operators by "codes" or "variables length codes", or where "variable length codes" are "based upon a frequency of occurrence of the associated operations". If Applicant has overlooked such teachings, Applicant respectfully requests that the Office specifically identify the portions of Thompson that disclose such teachings, including a detailed interpretation of how and why the cited portion teaches Applicant's feature. Applicant respectfully submits that even if Applicant were to agree, *arguendo*, that Thompson teaches a method that "...compares bytes in both files, determining if there is a mismatch, and in that case using a token to sync the files, where the token varies based on the differences between the two streams..." and "...where the server generates a delta file that shows the differences between the two files...", which Applicant does not, Thompson still does not teach or suggest the elements of Applicant's claim 1, as shown above. Further, the Office fails to provide any explanation how the cited teachings of Thompson are interpreted by the Office to teach Applicant's claim 1 features of "[a] generator of difference information ... wherein the generator ... outputs the difference information between the first and second streams of information including a differencing instruction set comprising a hierarchical tree map and a plurality of operators represented by variable length codes based on frequency of occurrence of the associated operations...", as required by M.P.E.P. §2142. Further, the Office cites only the teachings of Thompson, and does not show where Piotrowski teaches these aspects of Applicant's claim 1.

With further regard to claim 5, Applicant respectfully submits that the alleged teaching by Piotrowski "...where XML encodes data in a hierarchical tree structure..." does not teach or suggest an "operator" in a "set of operations", as recited by

Applicant's claim 5. As shown above, neither Thompson nor Piotrowski teach "operators" or "variable length codes", and therefore do not teach "variable length encoding techniques". Therefore, Applicant respectfully request that the rejection of claim 5 be reconsidered and withdrawn.

Based at least upon the above, Applicant respectfully submits that Thompson fails to teach or suggest at least these aspects of Applicant's claim 1. Applicant respectfully note that the Office cited only Thompson as teaching these aspects of Applicant's claim 1, and has not shown where Piotrowski offers any support in this regard. Because Applicant has demonstrated that Thompson does not teach or suggest "...a generator of difference information ... wherein the generator ... outputs ... a plurality of operators represented by variable length codes based on a frequency of occurrence of the associated operations...", and the Office has failed to show where Piotrowski remedies the shortcomings of Thompson set forth above, Applicant respectfully submits that the proposed combination of Thomson and Piotrowski cannot teach or suggest at least these aspects of Applicant's claim 1. Therefore, Applicant respectfully submits that the Office has not established a *prima facie* case of obviousness, and that the proposed combination of references fails to render claim 1 unpatentable, for at least these reasons. Accordingly, Applicant respectfully requests that the rejection under 35 U.S.C. §103(a) of claim 1, and claims 2-5 and 29 that depend from claim 1, be reconsidered and withdrawn.

With regard to independent claim 6, Applicant respectfully submits that claim 6 has been amended to include features of independent claim 1 and now recites, in part, "...a generator generating streaming updates, the generator processing at least one of a plurality of blocks of content, the at least one of a plurality of blocks of content comprising a stream of bytes, the generator processing the at least one of a plurality of blocks of content until reaching an end of the stream of bytes, the generator comprising an encoder employing a tree-based hierarchy for encoding a block of operations, and wherein the generator outputs difference information including a differencing instruction

set comprising a hierarchical tree map and a plurality of operators represented by variable length codes based on frequency of occurrence of the associated operations;....” Applicant respectfully submits that the proposed combination of Thompson and Piotrowski do not render amended claim 6 unpatentable, for at least the reasons set forth above with respect to the rejection of independent claim 1. Therefore, Applicant respectfully submits that Thompson and Piotrowski do not render claim 6 (and any claim that depends therefrom) unpatentable, and that independent claim 6 (and dependent claims 7-17) are allowable over Thompson and Piotrowski.

With further regard to claim 10, which depends from allowable claim 6, Applicant respectfully submits that claim 10 recites, in part, “...wherein the tree-based hierarchy employed by the encoder comprises at least three levels for encoding a block of N operations, the hierarchy comprising a top level wherein each node of the top level encodes N bytes, a second level wherein each node of the second level encodes N/4 bytes, and a third level wherein each node of the third level encodes N/16 bytes.” Applicant respectfully submits that the proposed combination of references does not teach or suggest the subject matter of Applicant's claim 10.

The Office asserts, at page 7, in part:

Piotrowski further teaches a tree-based hierarchy employed by the encoder comprising at least three levels for encoding a block of N operation [*sic*], the hierarchy comprising a top level wherein each node of the top level encodes N bytes, a second level wherein each node of the second level encodes N/4 bytes, and a third level wherein each node of the third level encodes N/16 bytes (column 3, lines 25-48, where an XML document is a collection of segments arranged in sub-trees of the root node, and where each sub-tree may further have a subsequent sub-tree. It would have been obvious to segment these sub-trees into defined sizes, as it would provide a simple mechanism for enabling the data to be maintained at a constant size).

Applicant respectfully disagrees with the above assertion by the Office, and now addresses Piotrowski at column 3, lines 25-48, which recites:

Each XML document is encoded as a collection of segments (e.g. XML portions), which enables the receiver 300 to no longer wait to receive the entire XML document before processing the information. Sub-trees are used in accordance with the teachings of U.S. patent application Ser. No. 09/411,756 filed Apr. 10, 1999, entitled "Method and Apparatus for Streaming XML Content," assigned to the assignee of the present invention and incorporated by reference herein.

For example, an XML document is decomposed and encoded as a collection of portions/segments or so-called sub-trees. A sub-tree is mounted on a given node, and contains the given node and all nodes beneath the given node in the hierarchical tree structure. Each sub-tree in a larger XML document tree is parsed and validated by the receiver 300 as if it is an independent tree. A given sub-tree can include additional sub-trees. Each sub-tree in the streamed XML document utilizes a structure node that serves as a sub-tree wrapper function around each independent sub-tree. The structure node indicates the relationship of the sub-tree to other sub-trees. In this manner, the XML receiver 300 can reconstruct the structure of the full tree provided enough of the streamed XML content is received.

Applicant respectfully submits that the portions of Piotrowski shown above teach that an XML document is encoded as a collection of segments, enabling a receiver to avoid waiting for the entire XML document before processing the information, and that an XML document is decomposed and encoded as a collection of portions/segments or so-called sub-trees which are mounted on a given node, and that the XML document contains the given node and all nodes beneath the given node in the hierarchical tree structure. The cited passage further teaches that each sub-tree in a larger XML document tree is parsed and validated, and can include additional sub-trees, and that each sub-tree utilizes a structure node that indicates the relationship of the sub-tree to other sub-trees. In this manner, an XML receiver can reconstruct the structure of the full tree provided enough of the streamed XML content is received.

The portion of Piotrowski shown above, which was specifically cited by the Office, does not, however, teach or suggest “operations”, or “blocks of operations”, encoding a block of N operations, or a the “tree-based hierarchy” employed by an encoder that comprises at least three levels to perform such encoding. In fact, as shown above, neither Thompson nor Piotrowski teach or suggest an “operation” as recited by Applicant’s claim 10 (which incorporates the features of claim 6.) There is no teaching or suggestion anywhere in Piotrowski regarding an “operation”, as recited by Applicant’s claim 10, or of encoding “blocks of operations” in the described manner. In addition, no explanation or interpretation of the teachings of Piotrowski is given to clarify how and why either Thompson or Piotrowski teaches Applicant’s claim features, in accordance with M.P.E.P. §2142. For at least these reasons, Applicant respectfully submits that the proposed combination of Thompson and Piotrowski does not teach or suggest the subject matter of claim 10, that the Office has not established a *prima facie* case of obviousness, and that claim 10 is allowable over the proposed combination of references.

Further, Applicant respectfully notes that the Office states “...i[j]t would have been obvious to segment these sub-trees into defined sizes, as it would provide a simple mechanism for enabling the data to be maintained at a constant size).” See Office action at page 7. Applicant respectfully submits that the source of the alleged motivation is not provided, and is not a “generic” motivation such as “efficiency”, “cost”, “speed”, or the like. While Thompson does mention maintaining “data consistency” and “synchronization”, Thompson is silent with respect to maintaining “data size.” Similarly, Piotrowski fails to make any mention of maintaining anything, and does not mention “data size” or anything that is “constant.” Applicant has been unable to find any such motivation to “maintain data at a constant size”, or any discussion of same, in either Thompson or Piotrowski. For at least the reasons above, Applicant respectfully submits that the Office has not established a *prima facie* case of obviousness with respect to Applicant’s claim 10, and that the Thompson and Piotrowski references, taken alone or in combination, do not render claim 10 unpatentable.

Based at least upon the above, Applicant respectfully submits that proposed combination of Thompson and Piotrowski fails to teach or suggest at least these aspects of Applicant's claims 6 and 10. Therefore, Applicant respectfully submits that the Office has not established a *prima facie* case of obviousness, and that the proposed combination of references fails to render claims 6 and 10 unpatentable, for at least these reasons. Accordingly, Applicant respectfully requests that the rejection under 35 U.S.C. §103(a) of claims 6-17, be reconsidered and withdrawn.

With regard to independent claim 18, Applicant respectfully submits that claim 18 recites features similar to those of claims 6 and 10, and that Thompson and Piotrowski do not teach or suggest at least those features. Therefore, Applicant respectfully submits that independent claim 18 and any of claims 19-28 that depend therefrom, are also allowable over the Thompson and Piotrowski references, when taken alone or in combination, for at least the same reasons. Accordingly, Applicant respectfully requests that the rejection of claims 18-28 under 35 U.S.C. §103(a) be reconsidered and withdrawn.

Conclusion

In general, the Office Action makes various statements regarding the claims and the cited references that are now moot in light of the above. Thus, Applicant will not address such statements at the present time. However, Applicant expressly reserves the right to challenge such statements in the future should the need arise (e.g., if such statements should become relevant by appearing in a rejection of any current or future claim).

Applicant believes that all of claims 1 and 3-29 are in condition for allowance. Should the Examiner disagree or have any questions regarding this submission, the Applicant invites the Examiner to contact the undersigned at (312) 775-8000 for an interview.

Appin. No.: 10/802,191
Filing date: March 17, 2004
Response dated December 2, 2008
Reply to Office Action mailed September 5, 2008

A Notice of Allowability is courteously solicited.

Respectfully submitted,

Date: December 2, 2008

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